

AMENDMENT UNDER 37 C.F.R. § 1.116
APPLICATION NO. 10/054,898
ATTORNEY DOCKET NO. Q67951

IN THE CLAIMS:

Please cancel ~~claim 57~~ without prejudice or disclaimer.

This set of claims is a clean set of the pending claims, consolidating any previous versions of pending claims into this single clean version, with changes made in this response being shown in the Appendix.

50. (Amended) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;

a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle;

wherein said first member comprises a protruding member formed on a surface thereof facing the ink chamber, said protruding member contacting the ink supply needle of the printing apparatus and said second member contained in said ink channel.

51. An ink supply system according to claim 50, wherein said first member comprises a hole through which ink flows, said hole being surrounded by said protruding rim, a diameter of said hole is smaller than that of the ink supply needle of the printing apparatus.

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52. An ink supply system according to claim 50, wherein said second member comprises a surface facing said first member formed with a convex surface.

57. An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;

a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith;

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle; and

a sealing member air-tightly closing said ink channel until said ink channel is open.

58. (Amended) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;

a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said

second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle;

wherein said second member comprises a surface, facing said packing member, provided with a notch, said notch having an angle defined in conjunction with the tapered angle of the ink supply needle.

59. (Amended) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;

a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle;

wherein said second member comprises a guide body operably allowing said second member to slide substantially vertically with respect to said packing member, said guide body operably suppressing a horizontal deviation of said second member.

60. An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;

a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle;

wherein said second member comprises a guide rod extending along a direction to the ink chamber, and a guide unit fitting with said second member for allowing said second member to slide along the direction of the sealing of said first member with said second member.

61. (Amended) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber along an ink supply port to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus, said ink channel extending substantially straight to an interior of said ink chamber from said ink supply port;

a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle;

wherein a direction of said ink channel is substantially the same direction as the direction of the sealing of said first member with said second member.

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Please add the following new claims:

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62. (New) The ink supply system according to Claim 58, wherein the angle of said notch is the same as the tapered angle of the ink supply needle.
63. (New) The ink supply system according to Claim 58, wherein the angle of said notch is smaller than the tapered angle of the ink supply needle.